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ABSTRACT

The Quinmester Visual Arts Education Curriculum, of which this is one course, is described in SO 007 721. Mosaic art is to be mastered through use of this guide in terms of its history, artists, tools, techniques, and applicability to individual expression. Course content is divided into three time periods. Course procedures and learning activities include a vocabulary list, supplies and materials lists, hints for instructors, and handouts for students on studio procedures, history of mosaic technique, selecting commercial materials, creating tile from clay, and construction techniques. A list of resource materials for pupils and instructors completes the course guide. (JH)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

SP 007 823

ART EDUCATION
Relief in Mosaics
6683.24

DADE COUNTY PUBLIC SCHOOLS
DIVISION OF INSTRUCTION • 1971

ED 095080

RELIEF IN MOSAICS

(Tentative Course Outline)

6683.24

6684.04

6687.06

6688.05

ART EDUCATION

Written by: Edward R. Dubocq

for the

DIVISION OF INSTRUCTION
Dade County Public Schools
Miami, Florida
1971

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I. COURSE TITLE

RELIEF IN MOSAICS

II. COURSE NUMBERS

6683.24

6684.04

6687.06

6688.05

III. COURSE DESCRIPTION

A course of study concentrating on bas-relief techniques in ceramics. Creative ceramic techniques is used to develop unusual designs meant to be seen as hangings. Techniques such as casting, hand building and throwing are combined to produce original sculptures.

IV. RATIONALE

It is important that any student of art become acquainted with the mosaic technique. The creation of mosaic works of art has been evolving for over five thousand years. Techniques in mosaics had become sophisticated before the birth of Christ. It is one of the oldest and most practiced arts in history.

Today, the art of making mosaics is quite evident in the United States. It has become one of the

dominant means of decoration, and is evident in places both public and private. Mosaic murals appear on buildings and homes throughout the world. Mosaics are being used both ornamentally (as artistic designs) and functionally (as signs, murals depicting events, etc.).

This quinmester course of study concerns itself with mosaics. The student will be presented with an overall introduction to the area of Mosaic Art, and be allowed to design and create an original example of mosaic design.

V. COURSE ENROLLMENT GUIDELINES

A. Prior courses: None

B. Elective, grades 7-12, exploratory

C. Concurrent programs:

There is no specific program that should be taken concurrently. However, a liberal arts or college preparatory program is recommended.

VI. BEHAVIORAL OBJECTIVES

A. Competencies expected of the student upon completion of this unit:

1. Description of the procedures for the following mosaic techniques:

a. Historical background of Mosaics

b. Selection of ready made materials

c. Methods of creating tile from clay

d. Mosaic construction techniques

2. Definition in writing, of related vocabulary terms as listed in part VIII of this quinmester course of study.

3. Ability to differentiate among a minimum of four Mosaic artists (and their work) from past and/or contemporary movements.

4. Ability to compare and identify various Mosaic tools and their functions.

5. Ability to identify and describe various types of Mosaic tile and assorted materials.

6. Ability to practice correct procedures for working in a Mosaic studio.

7. Creation of one example of a Mosaic mural, table top, plaque, etc.

8. Development of an original design (for example, #7).

9. Ability to demonstrate a professional artistic attitude towards studio, materials, fellow students and instructor during the course of this quinmester presentation.

B. The student will demonstrate competencies under the following conditions:

1. Classroom demonstration
2. Classroom discussion
3. Individual research
4. Individual studio procedures
5. Group critiques

C. Acceptable performance will be determined by the individual instructor on the basis of the following:

1. Evaluation of classroom participation
2. Empirical testing
3. Required projects submitted for evaluation
4. Test items based on the performance objectives

VII. COURSE CONTENT

<u>First and second weeks</u>

A. Movies, slides, visuals, etc., on mosaic art appreciation/history. (Materials may be selected from lists provided in part X).

B. Discussion of related terms. (Minimal vocabulary list provided in part VIII).

C. Explanation of available literature.

1. Selected reading assignments.

2. Outline assignments.

3. Distribution of work sheets; (See part VIII).

D. Explanation of studio procedures:
Care of studio and materials, proper use of storage, etc. (See part VIII for suggested list of studio procedures).

E. Demonstration of various areas of Mosaic Art.

1. History of Mosaic Art
2. Selecting ready-made materials
3. Methods of creating tile from clay
4. Mosaic construction techniques

Third - Ninth week

A. Studio experience; (students work on individual projects in studio).

1. Student-instructor interaction on individual problems.
2. Instructor may create informal "critiques" of student work to promote student interaction.

B. Additional instruction
Instructor may incorporate additional instruction, as needed for re-enforcement during studio time.

Example - additional movies, guest lecturers, field trips, etc.

End of ninth week

A. Students complete and submit final projects for critique and grading.

B. Studio is thoroughly cleaned and prepared for next unit.

VIII. COURSE PROCEDURES, STRATEGIES, AND SUGGESTED LEARNING ACTIVITIES

A. Vocabulary list*

1. Applied decoration: The surface design of an object.
2. Bisque: Greenware (bone dry clay) that has been fired to permanent hardness.
3. Body stains: Colorants added to clay.
4. Ceramic: Objects created from clay.

* Definitions, in some instances, compiled with the aid of:

American College Dictionary, New York: Random House, 1967.

Stribling, M. L., Mosaic Techniques, New York: Crown, 1969.

5. Craze: Random crack patterns in glass, or in a glaze.
6. Cure: The period of time that a mixture takes to become permanently bonded, or hard.

7. Engobe: Colored or dyed slip used in coloring a tile or form.
8. Epoxy: An adhesive mixture created from resins.
9. Glaze: An application of liquid glass used in coloring clay tiles.
10. Grog: Ground bisque added to clay for texture or shrinkage control.
11. Mastic: A rubber adhesive used in setting tesserae.
12. Medium: Any material used in the creation of a mosaic.
13. Mosaic: An art form distinguished by its fragmentation; a decorative arrangement of separate fragments into an organized whole object.
14. Slip: Liquid clay.
15. Studio: Any area designed for, or in which artistic expression takes place.
16. Tesserae: A name given to all small decorative fragments from which mosaics are constructed. (Derived from latin - "cube" or "square").
17. Texture: The surface composition of an object.

18. Thumbnail sketch: A small, rapidly executed drawing used primarily in developing a design or idea.

19. Tooling: Working the surface of an object with a tool or other implement to create a desired texture.

B. Supplies and materials:

This is a list of basic tools and supplies needed for mosaic creation. Other materials may also be needed according to specific procedures selected. See work sheets.

Slip	Trowel
Grog	Spreader
Clay	Adhesives
Grout	Abrasive stone
Dowels	Rolling pin
Glazes	Wedging board

Sink (water supply)

Kilns (high and low fire)

Mineral oxide colors

Modeling tools (clay)

Forms and backings (assorted)

Propane torch/soldering iron

Carbiloid tipped tile cutters (assorted)

Clay tiles and salvaged materials (see work sheet)

C. Studio procedures for students

(This list may be duplicated and distributed to students)

1. Students will at all times be expected to come to class on time, with required materials, and ready to work.
2. At the beginning of each class roll will be taken and all instructional announcements made.
3. Each student will be assigned an individual work and storage area for which he or she will be responsible.
4. Equipment will be distributed on a sign-out basis. Students will be expected to demonstrate correct care for and use of materials and equipment.
5. At no time will any student be allowed to use, touch or move another students materials or project.
6. Monitors will be assigned in certain areas as aides to the instructor.
7. All students will be expected to stop work and begin cleanup promptly, five minutes before the end of each class.
8. Students will at all times be expected to maintain a professional, artistic attitude

towards their materials, fellow students, and instructor.

D. Hints for instructors:

1. There are many visual aids available. Plan the ordering of movies, slides, etc., well in advance.
2. Design the studio so that there is a specific storage area for all supplies. (This step provides for a quick check of all materials at the end of each class)
3. In order to avoid unpreparedness, develop guidelines for students who are late in bringing in required supplies.
4. Assign monitoring positions on a rotating basis.
5. If equipment is at a minimum, have students sign it out. This will help to alleviate the "disappearing" tool problem that sometimes arises.
6. If the class in general is progressing too slowly, the announcement of "progress" grades will usually quicken the pace.
7. Have the assigned monitors check work areas at the end of each class.
8. For many processes involved in this unit,

designate a separate area for each to avoid contamination of materials.

9. Promote completely free, yet safe artistic expression.

E. Work Sheets:

Note: The following work sheets have been designed as direct teaching aids for student use. They may be duplicated and distributed for student reference following instructor demonstrations.

WORK SHEET - RELIEF IN MOSAICS

History of the Mosaic Technique

Examples of the mosaic process have been excavated from ruins of civilizations existing over 5,000 years ago. The artists of ancient Mesopotamia had developed mosaics into a highly sophisticated art hundreds of years before the birth of Christ.

But, the mosaic art had become so common by the end of the Byzantine period that the artistic aspect had deteriorated into simply a commercial means of covering a building. The methods remained, but the artistic talent and creativity had been lost in the process.

Surprisingly, the art of creating mosaics is having a revival in this century. Since the end of World War II the mosaic process has been reborn in America. Many new artists are turning to mosaics as a means of expression, and mosaic compositions are appearing more and more in private homes, art museums and public buildings. Current examples range from commercial hobby-type hot plate kits to highly sophisticated artistic murals in acrylic plastics, and the number of accomplished artists in the field is continually growing.

WORK SHEET - RELIEF IN MOSAICS

Selecting Commercial Materials

Porcelain Tile

There is a wide variety of commercial tile available to the artist today. Most of this tile is cast in a uniform thickness which facilitates easy construction. It is advisable, however, to compare the thickness of the tiles purchased, especially if you are dealing with different manufacturers.

The majority of commercial tile available today is composed of porcelain. These tiles are available in a wide variety of sizes and shapes, and may be purchased both glazed and unglazed. The glazed tile comes in an almost endless variety of colors.

Most commercial tile is attached in sheets to a gauze-type backing when purchased. Since these "patterned" sheets are quite rigid and final in design, it is recommended that the artist remove the tiles from the backing in order to create his or her own original design.

Glass Tile

There are numerous types of glass tile available to the artist today. Several of these types and their various characteristics include the following:

Mexican glass: A rather crude tile, available in several sizes and shapes. Rather hard to grout due to surface texture, and also difficult to control cutting.

Pressed glass: (Mold formed), generally irregular in shape and thickness. Available in various sizes and colors. (Colors may vary from one sheet to the next.)

Multicolored glass tile: Created from threads of glass that have been formed into a rod and cut crosswise.

Ribbon glass: Strips of glass used to create linear effects in a mosaic design.

Crushed glass: Available in various grits and colors. May be pressed into bed of mosaic.

It is worth noting that there are many materials available that do not necessarily have to be purchased. Some very effective mosaics have been created from salvaged materials. The following are suggestions of some materials that may be salvaged:

scrap glass - bottles, jars, auto glass, window panes, etc.

scrap metal - keys, gears, nuts, bolts, machine shop scraps

also - beads, marbles, buttons, wood scraps
pebbles, shells, seeds, eggshell
fragments, etc.

As you can see, Mosaic Art may be created from almost any object that can be glued, cemented, or otherwise adhered to a design or pattern. The cost for materials may range from expensive (for imported glass), to almost free, (for salvaged materials). Keep in mind that expense does not have a direct bearing on artistic beauty. It is al[illegible] in the individual ability of the artist to create beauty.

WORK SHEET - RELIEF IN MOSAICS

Creating Tile from Clay

Firing clay: (Which may be purchased at any ceramic supply house) opens a large area of original expression to the artist.

Procedures in this sheet will be limited to mosaic construction. It is suggested that the student refer to part IX of this unit for books describing the ceramic process in depth.

Creating Clay Tile

After wedging and kneading the clay (see references, part IX on ceramic processes), place it between two rulers or wood strips on a flat surface. Using a rolling pin, roll the clay to a flat slab of uniform thickness (1/4 - 1/8"). The thickness of the wood strips will determine the thickness of the clay slab. You are now ready to experiment with and create numerous textures on the clay. Suggestions for creating texture:

1. Scratching - The slab with various textural instruments, such as a fork, comb, toothpick, wire, pencil, or other sharp object.
2. Imprinting - The slab by pressing it down on a textured surface, such as coarse cloth, netting, embossed plastic, etc.

3. Burn out - Process by which objects that will burn away in the kiln (paper, sawdust, coffee grounds, etc.) are pressed or kneaded into the clay.

Clay tiles may also be created from liquid clay, called "slip". A small amount of slip is dribbled, or poured slowly onto a plaster bat, in a random design. When the clay becomes dull (3-4 minutes) repeat the process over the first pour. Do this several times until the whole form is solid clay. Allow to dry. Turn the piece over and you will have a lacy slab texture to work with.

Other interesting effects may be achieved by working with slip of various colors in combination.

Once you have textured the slab, you are ready to form your tile. This may be done in a random fashion by breaking the dried slab into pieces with your fingers or cutting into precise shapes using a sharp instrument and a ruler or compass. (For cutting, it is recommended that the slab still be slightly soft.)

After the tiles have dried thoroughly, fire in the kiln according to cone number of the clay (see references, part IX). The fired tiles (bisque) may then be glazed to add color if so desired.

WORK SHEET - RELIEF IN MOSAICS

Mosaic Construction Techniques

Basic Tools and Materials:

Mixing bowls	Tweezers
Backing material	Mastic
Rubber gloves	Brushes
Waterproof grout	Rags
Steel wool	Rubber cement
Heavy paper	Water soluble paste
Epoxy glue	Pencils, erasers, etc.
Grout sealer	Glass cutters and pliers
Wood sealer	Rubber and wood spatulas

Grout dyes (mineral oxides)

Tile cutters (nippers) - carbiloid tipped

Kilns and related ceramic equipment

Assorted tools for drilling, grinding, polishing

Planning the design:

Let it first be said that there are no specific "rules" in planning a mosaic design. It is, however, much like designing a painting. The mosaicist must contend with form, balance, color and line as related to a composition in a manner quite similar to that of a painting. In addition, the mosaicist must also work with texture, a very important part of mosaic design. Let the knowledge of design you

have learned in painting and drawing guide you in creating your composition.

Before you begin, you should decide whether the piece will be functional or non-functional. Functional mosaics create certain limitations on the artist. Primarily, the surface usually must be smooth. For example, a counter top, or table must have a smooth surface. This rules out highly textured handmade tiles and many salvaged objects. On the other hand, non-functional mosaics have very few limitations, if any.

The next step is to develop a series of thumbnail sketches to develop ideas on line, form, balance, etc. These sketches should be refined to a finished drawing.

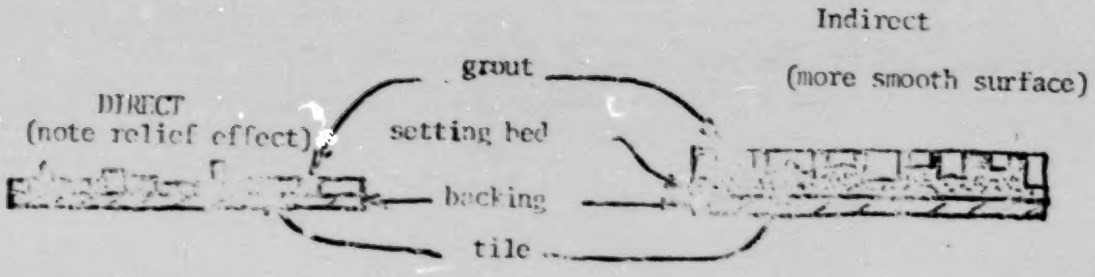
Once the finished drawing has been achieved, a full scale detailed drawing should be made. This will serve as a reference for laying out the tile.

For the purpose of this unit, two basic construction methods will be discussed.

1. Direct method - The direct method is used when a smooth-finished surface is not

necessary. This process is also used when the artist employs objects of varying thicknesses specifically to develop a relief effect. (See diagram).

2. Indirect method - This method is used for smooth and level finished surfaces, such as counter tops, tables, etc. The tile employed may be of varying thicknesses, as it will be pressed into a setting bed. (See diagram).



A. <u>The Direct Method</u>

The direct method is the simplest and basic method of creating a mosaic. The steps are outlined below:

1. Once the artist has decided upon the size of the piece, a base of appropriate size should be selected. Plywood or hardboard of a thickness sufficient to hold the weight of the tile without warping will do.
2. Apply a coat of wood sealer to the working surface of the backing.
3. Transfer the finished drawing to the working surface of the backing, (via carbon paper, etc.).
4. Select the tile to be used in the mosaic. If commercial tile is used, it should be soaked and washed with water to remove the backing and the glue from the tile. Allow the tile to dry thoroughly.
5. Using an appropriate mastic or glue (read directions on container) apply the tile to the wood backing, working from one corner of the composition across to the opposite side. (Do not cover too large a section

with glue at one time. You may not be able to apply the tile before the glue dries.) Leave approximately 1/16" between the tiles for grouting.

6. Cut tiles as you go to prevent waste. (Tiles should be cut or nipped face side up.)
7. Allow cement to dry thoroughly.
8. If colored grout is desired, mix in the dye before adding water.
9. Add water to grout (to consistency of cake batter) mixing thoroughly.
10. Apply grout with a rubber spatula or the fingers. Work quickly, pushing the grout well into the spaces. Wipe off excess with a damp cloth.
11. Allow to dry.
12. Clean off excess grout with steel wool and wipe clean with rags.
13. A grout sealer may be painted on as a waterproofing agent.

B. The Indirect Method

1. Create finished drawing (full size) of pattern or design on heavy paper.
2. Cut backing to size.
3. Coat backing with sealer.
4. Create a form (approximately 2" high) of metal strip, and secure to outside edge of backing.
5. Using rubber cement, glue the tiles face down to the finished drawing.
6. Using an appropriate material, mix up a batch of mortar for the setting bed.
7. Pour the mortar into the form and level mortar by pulling a board across the top of the form.
8. Lift the completed mosaic, turn it over, and press into the setting bed (paper side up.)
9. Level firmly by hand or by tamping with the leveling board.
10. Allow cement in setting board to harden.
11. Using bestine, dissolve the rubber cement and remove the paper. Wipe tile clear with rags.
12. Apply grout and sealer as in Direct Method.

The two methods outlined above are not, by any means, the only two means of creating a mosaic composition. There is also an almost endless list of techniques that employ modern polyester resins, fused glass, soldered frameworks, transparent and translucent plastics, etc. These techniques tend to become highly sophisticated in nature and it is advised that the student first orient himself with these two basic techniques before moving to the more advanced methods.

There are texts explaining the advanced methods in depth located in the list of resources for pupils (part IX of this quinmester course of study).

IX. RESOURCES FOR PUPILS

Note: It is suggested that resources marked with an asterisk be kept on hand for student use in the classroom.

* Arvois, Edmond, Making Mosaics, New York: Watson Guptill Company, 1967.

Hendrickson, Edwin, Mosaics: Hobby and Art, Hill and Wagner, 1957.

* Hutton, Helen, Mosaic Making, New York: Van Nostrand, Reinhold, 1966.

Hymann, R., Ceramics Handbook, New York: Arco.

* Jenkins, Louisa. Art of Making Mosaics, New York: Van Nostrand Reinhold, 1957.

* Kenny, John B., Ceramic Design, Chilton, 1965.

Lovoos, Janice, Modern Mosaic Techniques, New York: Watson Guptill, 1967.

* Priolo, J. B., Ceramics and How to Decorate Them, New York: Sterling Publishing Company.

Rhodes, D., Clay and Glazes for the Potter, New York: Chilton.

* Rossi, P., Mosaics: A Survey of Their History and Techniques, New York: Praeger Publishing Company.

Shaw, Ceramic Colors and Pottery Decoration, New York: Praeger Publishing Company.

* Stribling, Mary Lou, Mosaic Techniques: New Aspects of Fragamented Design, New York: Crown, 1966.

* Weiss, Ceramics: From Clay to Kiln, W. R. Scott.

Williamson, Robert, Mosaics: Design Construction and Assembly, New York: Hearthside Press.

X. RESOURCES FOR INSTRUCTORS

A. Movies, Slides, (available through Dade County Board of Public Instruction - Instructional Materials Division)

	<u>Discovering Texture</u>			
	17' C	EJS	FAC	1-11659
*	<u>Craftsmanship in Clay: Decoration</u>			
	10' C	JS	Indiana Univ.	1-04132
*	<u>Making a Mosaic</u>			
	10' C	EJS	Allen Moore	1-04154
	<u>Mosaic</u>			
	16' C	EJST	Lobett	1-11643

B. Textbooks

Those texts marked with an asterisk in part IX are also effective as instructor resource texts.